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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,610	08/24/2001	Huiping Li	37112-173148	8980

Venable
P.O. Box 34385
Washington, DC 20043-9998

EXAMINER

HAVAN, THU THAO

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,610

Applicant(s)

LI ET AL

Examiner

Thu-Thao Havan

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 1-38 are pending in the present application.

Response to Arguments

Applicant's arguments filed October 17, 2003 have been fully considered but they are not persuasive. Hooper et al. and Boneau et al. teach the claimed limitations.

Hooper teaches detecting at least one potential overlay in a video sequence (col. 2, line 58 to col. 4, line 25; col. 5, line 51 to col. 6, line 21). In other words, Hooper discloses encoding the background and still images according to a compression algorithm that is capable of describing a single image by an independent video frame and also capable of describing the differences between a pair of images by a change video frame, the result of the encoding step being a compressed independent video frame independently describing the background image and a sequence of at least one compressed change video frames describing the differences between the background image and the still image. He discloses storing the compressed video frames on a computer coupled to the communications medium in a manner sufficient to preserve the sequentiality of the compressed change video frames. In addition, Hooper discloses the overlay images occlude the portions of the background image where they are placed, and may in fact occlude other overlay images in whole or in part. An example of such a case is a conventional "pop-up" menu, which when it appears occludes a previously-displayed overlay image. The overall dialog image, then, can be thought of as being

created from a particular sequence of everlay images placed on top of the background image. This layered nature of the dialog image in particular is advantageously exploited in the present invention. However, the principles of the invention are generally applicable to any still image which can be decomposed into a background image and a sequence of overlay images. In that he discloses transmitting over communications medium a sequence of at least one compressed video frame.

Furthermore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim **1-38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hooper et al. (US patent no. 5,493,638) in view of Bonneau et al. (US patent 6,002,794).

Re claim **1**, Hooper discloses a method of extracting overlays from video comprising the steps of detecting at least one potential overlay in a video sequence (col.

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2, lines 22-67; col. 5, line 31 to col. 6, line 67). In other words, he teaches displaying an image by transmitting compressed video frames representing background and overlay portions. The background image is the creation of a compressed I-frame that independently describes the background image. For example, a button is added or overlaid on the background image.

Hooper fails to disclose verifying that the at least one potential overlay is at least one actual overlay as claimed. However, Bonneau teaches verifying that the at least one potential overlay is at least one actual overlay (col. 21, lines 19-28). In other words, Bonneau teaches an image of an object is detected by the database based on the text overlay on the image itself. An object to be identified had been partially obscured, the matching technique would only be applied to the edge information associated with a portion of the particular objects stored in a database which correspond to the unobscured portion of the image to be matched. Thus, it would have been obvious for one of ordinary skill in the art to combine the step of verifying that the at least one potential overlay is at least one actual overlay of Bonneau to the system of Hooper because it would have improve the user interface of Hooper to allow precise manipulation of each pixel (Bonneau: col. 21, lines 19-28).

Re claims **2-3 and 16**, Bonneau teaches post processing at least one actual overlay to remove extraneous pixel and computing a variance for each pixel of the at least one actual overlay; and comparing the variance with a threshold to determine whether or not the pixel should be removed as an extraneous pixel (col. 6, line 18 to col.

7, line 67). Bonneau teaches decomposing the image into first and second scale based on the pixel. He computes all the pixels with modulus that exceeds a certain threshold.

Re claims **4, 25**, Bonneau teaches detecting comprises the steps of performing wavelet decomposition on the video sequence (col. 6, lines 46-67), extracting features based on the results of the wavelet decomposition (col. 7, lines 50-67), and performing neural network processing on the extracted features (col. 11, lines 14-67; figs. 2 and 5).

Re claims **5, 21**, Bonneau discloses utilizing three-layer back-propagation neural network processing (col. 12, lines 1-65). Bonneau discloses the different scaling of the wavelet transformation. The scaling shows the relationship between the range blocks in high frequency scale one image to the domain blocks in high frequency first scale. The domain blocks for a given scale are mapped to the range blocks of the next lower scale.

Re claims **6, 15, 30, 32-33**, Bonneau discloses performing temporal verification and performing spatial verification (fig. 1-element 115 and fig. 6-element 525).

Re claims **7, 17-20, 22-24, 31, 34, and 36-38**, Bonneau teaches translating potential overlay over a search range, for each translated version of potential overlay, computing a mean square error in a next video frame of video sequence subsequent to a video frame in which potential overlay is originally detected, determining a minimum of the computed mean square errors for next video frame, and comparing the determined minimum mean square error to a threshold (col. 4, lines 51-67; col. 8, lines 36-63).

Bonneau teaches the calculation between the first frame and the next frame. The average optical flow of the range and domain blocks is then calculated. If a large

number of blocks are changed, the entire next frame will be encoded in order to minimize error in the image.

Re claims **8-14**, Bonneau discloses selecting a particular pixel of potential overlay and recording its coordinates and recording the translated coordinates of particular pixel corresponding to determined minimum mean square error (col. 14, line 52 to col.15, line 46; col. 21, line 29 to col. 22, line 52; figs. 7 and 13).

Re claim **26-28**, Bonneau teaching is a in a computer software system. It is apparent that computer software is stored on readable medium.

Re claim **29, 31, and 35**, the limitations of claim 29, 31, and 35 are identical to claims 1-6 above. Therefore, claim 29, 31, and 35 are treated the same as discussed with respect to claims 1-6 above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan
December 31, 2003



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600